

### Claims

1. A method of magnetic resonance imaging of blood vessel walls, comprising administering a series of DIR preparation pulse modules at a repetition interval short enough that at least two DIR preparation pulse modules generally occur within each  
5 RR interval;  
in the interval between each DIR preparation pulse module, acquiring image data for a plurality of slices; and  
repeating the data acquisition across sufficient RR intervals to acquire images for the plurality of slices.  
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2. The method of claim 1 wherein the repetition interval for the administered DIR modules is less than about 500 msec.
3. The method of claim 1 wherein the inversion time  $TI_0$  is less than about 190  
15 msec.
4. The method of claim 1 wherein image data acquisition extends across an interval that begins before and ends after the inversion time  $TI_0$ .
- 20 5. The method of claim 4 wherein image data acquisition occurs in an interval when longitudinal magnetization of blood is reduced to at least 10 percent of full longitudinal magnetization.
6. The method of claim 1 wherein image data acquisition is cardiac triggered.  
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7. The method of claim 1 wherein image data acquisition is untriggered.
8. The method of claim 1 wherein the DIR modules comprises an inversion pulse followed by a reinversion pulse, and the reinversion pulse reinverts a plurality of the  
30 slices to be imaged.

9. The method of claim 8 wherein the DIR modules consist of an inversion pulse followed by reinversion pulse that reinverts all of the slices to be imaged.